California Regional Water Quality Control Board
Santa Ana Region

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March 3, 2003

Mr. James Good
Gresham, Savage, Nolan & Tilden, LLP
6000 North Arrowhead Avenue, Suite 300
San Bernardino, Ca 92401-1148

CONDITIONAL APPROVAL OF WORK PLAN FOR INITIAL PERCHLORATE INVESTIGATION AT ASTRO PYROTECHNICS – 2298 WEST STONEHURST DRIVE, RIALTO, SAN BERNARDINO COUNTY

Dear Mr. Good:

Board staff has reviewed the December 9, 2002 submittal entitled "Work Plan for Initial Perchlorate Investigation" for the Astro Pyrotechnics facility, located at 2298 West Stonehurst Drive, Rialto. The work plan was submitted by your environmental consultant (Kleinfelder), in compliance with the Investigation Order letter that I sent to you on November 6, 2002.

Members of the Inland Empire Perchlorate Regulatory Task Force provided comments on the work plan to us, and those technical comments were considered in preparing this response. Based on our review, I conditionally approve the proposed work plan, as modified by the comments described in this letter.

The Astro Pyrotechnics facility occupies approximately five acres of leased land located in the northeast corner of the intersection of Stonehurst Drive and the extension of Alder Avenue. The site consists of 25 buildings and storage units. The facility manufactures theatrical 1.4G fireworks and pyrotechnic articles for shipment to off-site, licensed professional customers. The facility receives raw materials (including chemicals and paper goods), and assembles various types of fireworks inside small work buildings.

Raw chemicals are stored in bulk in Unit Nos. 6, 12, and 13a through 13e, and laboratory chemicals are stored in Unit No. 11. Various other buildings are used for the manufacture and storage of firework products.

Four of the work buildings (Building Nos. 1, 8, 10, and 15) have concrete "liquid collector pads" situated adjacent to the building exit doors. These concrete collector pads are flat, rectangular areas with a shallow concrete rim, and are used for collecting the wastes that are generated during the fireworks manufacturing process. These wastes include powdered oxidizers (specifically potassium nitrate, potassium

perchlorate, and other perchlorate salts) that have been washed from the floors of the work buildings and into the concrete pad areas. According to Kleinfelder, the waste liquids and sludge that accumulate on these concrete pads are regularly pumped and scraped from the pads, then placed into plastic DOT-approved drums. The drums are shipped off-site for disposal.

Your work plan proposes that, during this initial phase of perchlorate investigation, Kleinfelder will review additional historical records (consisting of aerial photographs, building permits, property ownership records and other documents). This review will focus on information related to past and current site activities, areas of waste disposal, and other areas where releases of perchlorate might have occurred. The on-site locations for these activities will be identified and correlated with the existing site features. In addition, facility operations, process flow, chemical use, and waste streams at the Astro Pyrotechnics facility will be reviewed to develop additional understanding of the manufacturing processes that may have resulted in, or could result in, releases of chemicals to the soil and groundwater.

Field activities are also proposed in the work plan. Based on their review of information thus far, as well as their interviews and discussions with representatives of Astro Pyrotechnics, and in combination with their recent site reconnaissance, Kleinfelder is proposing an initial soil investigation of specific areas at the Astro Pyrotechnics facility. The proposed fieldwork at the Astro Pyrotechnics site consists of five exploratory trench excavations to collect soil samples for analysis of perchlorate. A backhoe is proposed to be used to excavate trenches at the following five locations:

- One trench in front of the oxidizer storage shed (Unit No. 13c).

- One trench adjacent to each of four liquid collector pads near Building Nos. 1, 8, 10, and 15.

Each trench is proposed to be excavated to a total depth of ten feet below ground surface (bgs). Soil samples are proposed to be collected at 1, 5, and 10 feet bgs. Each trench is proposed to be backfilled with the excavated soil, and the material compacted with the backhoe.

On February 6, 2003, Board staff visited the Astro Pyrotechnics facility. Mr. Gary Brown and several other staff from Pyro Spectaculars and Astro Pyrotechnics provided a tour of several of the work buildings, including those used for the manufacture of fireworks products. Board staff observed the concrete pads adjacent to the buildings, where accumulated liquids and sludge wastes that are generated during the manufacturing process are kept until transferred into the plastic drums and shipped off-site for disposal. According to Astro Pyrotechnics' staff, the accumulated liquids and sludge are kept in these open pads until most of water has evaporated and the volume of liquid has been reduced.

Based on the facility's current manufacturing operations (as described by Kleinfelder), and Board staff's observations of the liquid and sludge waste handling practices at the site, and considering the history of more than 20 years of pyrotechnics manufacturing at the site, we believe the proposed investigation of the liquid collector pads must be revised. The single trench adjacent to Unit No. 13C is acceptable as proposed. The four trench excavations in the vicinity of Buildings 1, 8, 10, and 15 must be performed in the soil immediately beneath the existing concrete pads, not adjacent to the pads as proposed.

In order to accomplish this task, it will be necessary to provide access for the backhoe at each concrete pad area, and excavate the soil directly beneath the pads to a minimum depth of ten feet bgs. The soil at this locality is known to be very coarse-grained, including small to medium-sized boulders, interbedded with finer-grained soils. During the excavation, samples of the finer-grained materials (such as silt, sand, or clay) must be collected from each trench, at the proposed depths of 1, 5, and 10 feet bgs. The samples must be transported to a California-certified analytical laboratory and analyzed for perchlorate, using US EPA Method 314.1, volatile organic compounds using US EPA Method 8260, and for electrical conductivity (salt content) using the saturation extract procedure.

We believe it is possible to perform each excavation in a manner that will minimize disturbance to the normal site operations. Therefore, you must make appropriate arrangements for the temporary storage of the waste materials that are associated with Building Nos. 1, 8, 10, and 15 (normally stored on the concrete pads).

A plan for temporary containment of the waste, to be implemented during the trenching activities at the site, must be submitted to me in writing by March 19, 2003. This plan must also describe the procedure for off-site disposal of the waste. In addition, we ask that you include a detailed time schedule for completing the field work and submitting the report of the results of the investigation. The plan will be subject to my approval.

The waste that is typically placed on the concrete pads and in plastic drums at this facility is a high salinity liquid or sludge, containing potassium nitrate, potassium perchlorate, and other perchlorate salts. Concrete is not an effective, permanent barrier to infiltration of liquid, and is therefore not an acceptable waste containment liner. In addition, the pads lack the capacity necessary to prevent overflow and runoff of waste from a 24-hour, 25-year storm event. Be advised that henceforth, these concrete pads will no longer be considered acceptable storage facilities for waste and wastewater at the Astro Pyrotechnics facility. Permanent facilities such as appropriately lined storage sumps or ponds, with ample capacity, as well as secondary containment for the drums that are stored on-site, must be proposed and installed. The design of these waste containment features will be subject to Board staff approval.

Please be aware that the need for additional site investigation of the soil and groundwater will be evaluated once this phase of investigation has been completed and Board staff has reviewed and evaluated the soil sampling results.

We request that all records and aerial photos that are made available to your consultant for review and evaluation also be made available to Board staff simultaneously, in advance of commencing your field investigation.

Please notify the following individuals at least 24 hours prior to all field work to allow for inspection and oversight as needed: Kamron Saremi, RWQCB, (909) 782-4303; Wendy Arano, DTSC, (714) 484-5480; and Peter Murphy, Kennedy/Jenks Consultants - Perchlorate Task Force, (949) 261-1577.

If you have any questions, please contact Kamron Saremi at (909) 782-4303, or you may call Ann Sturdivant, Chief of our Spills, Leaks, Investigations and Cleanups Section, at (909) 782-4904.

Sincerely,

Gerard J. Thibeault
Executive Officer

cc:
Jorge Leon, SWRCB, Office of Chief Counsel
Inland Empire Perchlorate Regulatory Task Force members (mailing list attached)
James Souza, Gary Brown – Pyro Spectaculars/Astro Pyrotechnics

AES: Rialto perchlorate/13267/Astrowrkpla 03-03-03